

CLAIMS

1. A process for preparing fine zeolite particles comprising reacting a silica source with an aluminum source in the presence of an alkaline earth metal-containing compound, wherein the fine zeolite particles have an average primary particle size of 1.5 μm or less.

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2. The process according to claim 1, wherein the alkaline earth metal is Ca and/or Mg, and wherein the alkaline earth metal-containing compound is used in an amount such that an $\text{MeO}/\text{Al}_2\text{O}_3$ molar ratio is 0.005 to 0.1, wherein Me is Ca and/or Mg.

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3. A process for preparing fine zeolite particles comprising feeding for reaction an aluminum source and/or a silica source into a circulating line connected to a reaction tank, wherein the aluminum source and/or the silica source is fed into the circulating line connecting between an outlet of the reaction tank and an inlet of a mixer.

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4. The process according to claim 3, wherein the aluminum source is supplied to the reaction tank and circulated in the circulating line, and wherein the silica source is fed into the circulating line.

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5. The process according to claim 3, wherein the silica source is supplied to the reaction tank and circulated in the circulating line, and wherein the aluminum source is fed into the circulating line.

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6. The process according to any one of claims 3 to 5, wherein the aluminum source and the silica source are mixed in the circulating line at a mixing ratio of 0.1 to 3, as expressed by an $\text{SiO}_2/\text{Al}_2\text{O}_3$ molar ratio.

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7. The process according to claim 1 or 2, wherein the aluminum source and/or the silica source are fed for reaction into the circulating line connected to the reaction tank.

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8. The process according to any one of claims 3 to 6, wherein the fine zeolite particles have an average primary particle size of 1.5 μm or less.

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9. The process according to any one of claims 1 to 8, wherein the fine zeolite particles have the general formula in anhydride form:

$$xM_2O \bullet ySiO_2 \bullet Al_2O_3 \bullet zMeO$$

wherein M is an alkali metal; Me is an alkaline earth metal; x is a number of 0.2 to 2; y is a number of 0.5 to 6; and z is a number of 0.005 to 0.1.

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10. The process according to any one of claims 1 to 9, wherein the fine zeolite particles have a cationic exchange speed of 150 mg CaCO₃/g or more.

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11. Fine zeolite particles obtainable by the process according to the process of any one of claims 1 to 10.

12. A detergent composition comprising the fine zeolite particles of claim 11.

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